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KENNEDY COYOTES AND COMPUTERS:  
A TECHNOLOGY TRAINING PROGRAM FOR KENNEDY SCHOOL

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A Project  
Presented to the  
Faculty of  
California State University,  
San Bernardino

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In Partial Fulfillment  
of the Requirements for the Degree  
Masters of Arts  
in  
Education: Instructional Technology

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by  
Deidre Ellen Sitko  
June 1997

KENNEDY COYOTES AND COMPUTERS:  
A TECHNOLOGY TRAINING PROGRAM FOR KENNEDY SCHOOL

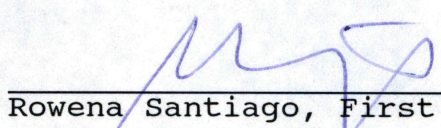
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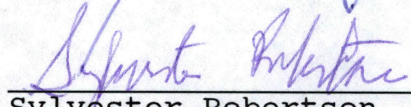
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by  
Deidre Ellen Sitko  
June 1997

Approved by:

  
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Rowena Santiago, First Reader

  
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Date

  
\_\_\_\_\_  
Sylvester Robertson, Second Reader

## ABSTRACT

The goal of this project is to design and develop a training program that will allow elementary (K-5) schools to begin incorporating technology into their curricula. It addresses the need among schools that are bridging the gap between the acquisition of technology and the inclusion of technology as an intricate part of their educational goals. It will provide guidelines and suggestions based on current research on how to assess the needs of the school and how to design a successful staff development program.



## ACKNOWLEDGEMENTS

No accomplishment of this scope can be made without the support of many people. My thanks to Dr. Rowena Santiago and Mr. Sylvester Robertson for their continuous direction and commitment. I would also like to thank Dr. George Araya for his commitment to the technology program at Desert Sands Unified School District. The encouragement of my family and friends, especially Teri West, has been constant and limitless. Especially I would like to thank my husband, Joseph, for his love, strength, and support, and for always encouraging me to be the most I can be. He is the best.

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## CHAPTER ONE

### INTRODUCTION

It is the goal of the American educational system to prepare students for the 21st century. All students should be prepared to succeed in an information-rich society. New methods of educating our young are necessary if they are to be able to meet the needs of the business world in the not too distant future (Reigeluth, 1992).

The technology evolution is bringing about a new conception of literacy that is moving away from the traditional Three R's of reading, *w*riting and *a*rithmetic and towards the Two C's of *comprehension and communication* which seems more appropriate for educating children in the information age (Sponder, 1994). The American educational system must begin to prepare students for the information age. It must begin to integrate comprehension and communication skills into the curriculum so that the students will be able to involve themselves in all aspects of the information age.

Reform in education comes from the realization that current instructional practices are not adequately preparing students. A major reform in K-12 instruction and assessment has begun. This reform is being driven both by a grassroots effort and by national and state policy



changes. Educators are currently looking for new ways to meet the academic challenges faced by today's students. They are looking for schools "designed for learning, rather than teaching" (Peck & Dorricot, 1994).

Constructivist learning theory indicates that students learn best through meaningful interaction with the world around them. This interaction develops critical thinking and problem solving skills. When students arrive at a personally meaningful understanding of issues, those students familiar with the constructivist learning process will adapt these processes to fulfill their own goals and thus find learning motivational and intrinsically rewarding (Bagley & Hunter, 1992). Educational technology will allow for the creation of an environment where teachers guide learners as they construct new knowledge for themselves. Educational technology in this instance is defined as any computer-based instruction. This computer-based instruction and the skills needed for its successful use will foster teaching and learning opportunities which will provide essential thinking skills to the next generation of adults. Strommen and Lincoln (1992) suggest that basic changes in the curriculum are needed to improve our schools, and an effective use of technology must be a part of these changes.

Everywhere in education we see a lack of awareness of effective uses of technology (Strommen and Lincoln, 1992).

This system-wide failing has left American schools lagging behind in a technology-rich world environment. The United States leads the world in the number of computers in its schools. However, despite all this equipment, American students are less computer-knowledgeable than many industrial nations. In addition, their teachers receive less training than their counterparts in Europe and Japan (Siegel, 1994). Technology is a critical element for achievement of world class standards, allowing students to access information, manipulate data and express ideas to an authentic audience (Bellingham, 1996).

The effective use of technology can support and promote new educational strategies that include: student-centered classrooms, interactive instruction, real-world problem solving and multidisciplinary studies (Transforming, 1995). The goal of technology in education is to improve all types of instruction and learning. However, the incorporation of technology must be planned for, so that it becomes an integral part of the curriculum and teaching goals.

The issue of training faculty is significant because it is the weak link in the system for preparing students to be successful in an information rich society. There is a systematic lack of awareness of the appropriate uses of technology in our schools today (Collins, 1990). The classroom has traditionally been the last institution in

our society to benefit from new technology, be it calculators, VCR's or computers (Strommen and Lincoln, 1992). Schools have begun the initial process of purchasing the hardware and software needed for students to benefit from technology. Teachers must now be provided with the time and support to explore technology on their own. Administrators must provide the time and space for teachers to take a break from teaching and start to learn. Teachers must be treated as the professionals they are. Teacher creativity is a powerful force for positive change, but it can only develop if it is unleashed and supported by training.

Nate Bush, vice president of the District of Columbia School Board says "It's the easiest thing in the world to buy the equipment, and even to get the kids interested in it. The difficult thing is to engage the teachers and the principals." (Buchsbaum, 1992).

Desert Sands Unified School District in Palm Springs, California is a district that has bought the equipment and interested the students. They are now in the dilemma of how to successfully train the teachers to use technology for more than fancy word processors.

The task of this project is to assess the technology training needs of an elementary school and develop a training plan that will prepare the teachers to meet the

challenges they face as they prepare the students for the information age of the 21st Century.

This project will consist of three goals.

1. Assess the technology training needs of the faculty at John F. Kennedy Elementary School in Indio, California.

A questionnaire format will be used to assess the technology needs of the faculty at Kennedy School. The 39 teachers currently employed at this site have varying degrees of technical expertise. A needs assessment will allow these needs to be addressed in an organized manner.

2. Develop a technology training plan that adheres to the principles and guidelines for successful training that will train teachers in the software/hardware that they will need to incorporate technology into the curriculum.

The technology training plan will cover software/hardware that include but is not be limited to: Compel, HyperStudio, Publish It, Office 95, Internet use, Scanners and Digital Cameras.

3. Develop the structure for follow-up and support groups.

The technology training plan will form groups that will provide peer support for their members through the difficult journey of implementing technology fully into the curricula.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

#### Preparing For The Future

In barely 20 years, electronic technology has dramatically penetrated into every area of society. Television was the initiator. It recast the world as a direct experience, and liberated it from the confines of text and static illustrations. Computers made it possible for vast amounts of information to be instantly available and modified with a keystroke. Not only society but the very nature of education was changed.

Children of the 80's and 90's have been raised in a world of instant access to knowledge formerly presented solely through text. They are used to an environment where they control information flow and access, whether through a video game controller, remote control, mouse or touch-tone phone (Strommen and Lincoln, 1992).

In contrast, schools are embedded in our culture and reflect its values, but the technological changes that have swept through society have left the educational system largely unchanged. In these 20 years, a dramatic gap has opened between the process of teaching and learning in schools and how children obtain knowledge in society at large (Cross, 1995). While the gap is closing, the result of this difference is an estrangement of schools from the



society, and from the children who live in it. The question to be answered is how do we educate the "new child" raised in this world of instant information, where interactive technologies have led them to believe they can act on the world with a press of a button (Strommen and Lincoln, 1992)? One way is to understand the theory of constructivist learning and how it can be applied to computer-assisted learning and teaching. Constructivism is a valuable perspective that has much to contribute to our understanding of how to facilitate learning (Reigeluth, 1991).

### Constructivist Learning Theory

One fundamental premise of constructivism is that children actively construct their own knowledge. Rather than simply absorbing ideas spoken to them by teachers, or somehow internalizing them through endless, repeated rote practice, constructivism posits that children actually invent their ideas. They assimilate new information into simple, pre-existing notions, and modify their understanding in light of their new data. In this process, their ideas gain complexity and power, and with appropriate support, children develop critical insight into how they think and what they know about the world as their understanding increases in depth and detail. Constructivism emphasizes the careful study of the

processes by which children create and develop their ideas. Its educational applications lie in creating curricula that match (but also challenge) children's understanding, fostering further growth and development of the mind (Strommen and Lincoln, 1992).

According to traditional instructional design and methodology standards based on cognitive learning, well designed curricula contain tightly sequenced concepts taught through direct instruction and hands-on learning activities. In-class and out-of-class assignments elaborate on in-class lecture, discussion, and course readings. Yet a problem exists: students report an inability to transfer learning and skills from these courses to practice (Nicaise and Barnes, 1996).

Constructivism makes a decidedly different set of assumptions about learning and the processes for supporting learning than do traditional curriculum-based or instructional systems approaches to designing instruction. Constructivism proposes that learning environments should support multiple perspectives and/or interpretations of reality, be context-rich, support knowledge construction, and included experiential activities (Jonassen, 1990). In other words, learning environments should be adaptable to students arriving at their own conclusions based on the information they are gathering or assimilating. The new information they are acquiring must be connected to

knowledge the learner already has. Constructivism states that we learn new knowledge only when it can be incorporated into knowledge that we already have. For real learning to take place a learner must use the knowledge to which he is being introduced. Only by experiential activities do we truly integrate new knowledge into our permanent schema of knowledge.

### Technology as a Constructivist Learning Tool

The need for alternative instructional environments accompanies the growing comprehension and acceptance of constructivism. Too often, schools fail to capitalize on what is known about how people learn most effectively. Constructivist believe people are active seekers and constructors of knowledge coming to classrooms with innate goals and curiosities (Brooks & Brooks,1993). Constructivist teachers often use authentic tasks in the classroom. Tasks that are true to life and have inherently complex problems, these tasks integrate multiple concepts or skills and occupy large portions of the class time. Analyses of the constructivist's conditions necessary for learning offer these clues for designing effective learning environments (Pea, 1989). Learning should take place in context and be functional. It is the result of goal setting, strategic planning, monitoring, evaluation, and

revision, and it is the result of knowing how to learn (Berryman, 1996).

Technology is beginning to break down the hierarchies, monopolies and bureaucracies of the industrial society, so too it is bringing the demise of education as we know it. Given what we know regarding how people learn technology can be used to bridge the gap between the industrial and information ages (Educom Review, 1997).

The role of the teacher changes from information provider, sequencer of information, and test creator, to guide, scaffolder, and problem or task presenter. Teachers are responsible for creating information-rich environments where students seek out and interact with CD-ROM databases, reference materials, video and music libraries, and the Internet (Nicaise & Barnes, 1996).

These authors go on to state that once students are adept at using technology they have quick access to multiple resources and tools for combining those resources. They can spend less time looking for answers and information and more time analyzing, reflecting, and developing an understanding. Students are spending less time in rote practice and spending more time planning meaningful ways to convey what they have learned. Through the use of authoring programs, such as HyperStudio, Compel and PowerPoint, students are assessing information and understanding complex issues. By posting their work on the

Internet via Web pages, students are presented with opportunities for social dialogue and discussion that lead to higher-level thinking skills. Word processors, spreadsheets, databases and Internets enable teachers and students to reorganize, consolidate, and share information. It is in this process of reorganizing, consolidating and sharing information that learning takes place.

Research investigating the various ways that technology tools affect learning can be divided into ten areas: (1) active learning, (2) empowerment, (3) time spent in learning, (4) enjoyment of learning, (5) use of resources, (6) problem solving, (7) reflection, (8) collaboration/communication with others, (9) independence, and (10) creative and critical thinking (Bagley & Hunter, 1992).

Other researchers have found similar results in their research. According to Capper (1988) educators are seeing that active learning leads to greater retention of information and higher-level thinking skills. Teachers are beginning to encourage students to take responsibility for their own learning, by allowing them to make choices about how and what they will learn, and urging them to be active rather than passive participants in the learning process. Capper found strong evidence that students become empowered and invested in activities they carry out while using computers. The author further relates that students who



developed technology projects voluntarily spent greater amounts of time inside and outside of class on these activities.

Preliminary research at the University of Wisconsin-River Falls suggests that students seem to enjoy learning more, and use more resources, including books, teachers, other adults, and other students. Again, the researchers found that students are challenging themselves to higher levels of learning.

Bagley & Hunter (1992) feel that students using technology have added to their problem solving skills and are better able to discuss and reflect on what they learn. Hawkins, Sheingold, and Berger(1982) found that students spend more time collaborating with other students and communicating more with teachers and others about what they are learning when developing technology projects. They also found the students engaged in computer-based instruction with a partner required less teacher assistance than did students working alone. Learners using technology also tended to use more critical thinking to develop creative responses to problems.

Again, according to Jones, Valdez, Nowakowski, and Uasmussen (1996), there are seven variables which indicate that effective teaching and learning are taking place: (1) students are engaged in authentic and multidisciplinary tasks, (2) assessment is based upon students' performance

of real tasks, (3) students participate in interactive modes of instruction, (4) students work collaboratively, (5) students are grouped heterogeneously, (6) the teacher is a facilitator in learning, and (7) students learn through exploration. The authors also agree that all the variables are increased by the use of technology in the classroom.

Schools that have embraced technology have seen the benefit of moving to more active learning activities where learners will communicate and collaborate inside as well as outside of the classroom. These schools have seen the results in increased academic progress by the students.

Technology holds the key to an American educational rebirth. If you give a student the choice of researching environmental pollution using a textbook or using a multimedia encyclopedia and information gleaned from a discussion with a scientist on the Internet she won't hesitate in choosing to sit down at the computer. Technological resources can make learning interactive and enjoyable (Schurman, 1994).

By joining technology and constructivism, learners will be empowered to take responsibility and ownership of their learning, and then we will see the promise of technology to enhance and reform education . In order for this revolution to take place it has become necessary to train teachers in the use of the technology.

### Staff Development and Technology Training

Education is changing. The United States educational system is moving toward curricula that encompasses many of the criteria referred to above. Teachers are beginning to provide guidance instead of lectures; allowing student choice; and to build small group relationships and communications between students and teachers (Bagley & Hunter, 1992). This change will come about more rapidly when we begin to look at the needs of the teachers to adapt to and promote these changes. Teachers need to be comfortable with technology and then learners will be empowered to take responsibility and ownership for their learning. At that time the promise of technology to enhance and reform education could materialize. The next step can happen by improving staff development (Transforming, 1995).

The majority of schools in the United States have begun to purchase the hardware needed in the classrooms. Now that the hardware is in place we must begin the process of how to put it to its best use in the classroom (Dempsey, 1993).

The difficult step for many schools is how to move a staff that has little or no technology training to a staff using computers and technology to enhance curriculum. Many schools have addressed this problem with great success. According to Barksdale (1996), the issue is no longer

whether or not we have to train our staffs, but how do we most effectively train them in the shortest amount of time?

In 1983, eight schools in Washington, DC purchased equipment to set up computer labs with Apple computers, videodisc players, and a telecommunication link to an education network at Stanford University (Buchsbaum, 1992). The report further cites that this is a fairly impressive technology list for 1983, except for the small detail that the equipment had been sitting unopened for a year-and-a-half. No one knew what to do with it. Fear, ignorance, and entrenchment, "paper and pencils are just fine", kept everything in a closet.

The Washington, DC scenario is not an isolated case. Shari Robinson (1993) attributes such cases to the lack of teacher training. Training teachers in the use of technology is the vital link to integrating technology and curriculum. Technology in and of itself cannot be the focus of change in American education. There is a need to commit the time, equipment, funding and expertise that are needed to develop the ongoing technology programs reformers are calling for. Given the number of teachers involved and the basic level of their computer awareness, training is vital (Harrington-Lueker, 1996). As noted by Riel (1990), new tools alone do not create educational change. The power is not in the tool but in the teaching community that

can be brought together and the collective vision that teachers share for redefining classroom learning.

The staff development model must be redefined if we are to successfully train teachers in technology. William Fiske, an instructional technology specialist at the Rhode Island Department of Education, offers this blunt assessment: "What school systems today describe as training is an almost fruitless effort to show teachers where the switches are." Research shows that the effective technology staff development must be long-term and ongoing (Harrington-Lueker, 1996).

Training in a classroom setting is what many people visualize when they think of technology training. Usually, it is a group of teachers in a computer lab being taught the basics of a software program by an expert. The problem with this model is that it usually takes teachers away from their classrooms, so provisions must be made to handle the students while they are away (Kowall, 1995). Furthermore, this training method only exposes the trainee to the basics of the technology and the trainee is expected to explore and learn more about the topic on their own (Zeitz, 1995).

Video taped training is another method used by school districts. The pros of this type of training is that it can be used anywhere there is a VCR and at any time. The problem is that it is not interactive and the student can



not have questions answered. Also, video training is limited to "nuts and bolts" issues such as how to use the software or how to install hardware. There may also be the problem of having a computer available when watching a VCR (Kowall, 1995).

Kowall goes on to discuss the attributes of computer-based training. This is the use of computers and tutorial software to train users. This type of training is usually done on an individual basis and the student can proceed through the lesson at his own speed and can review when necessary.

The above methods of training teachers to use technology has been shown to be effective for learning to use hardware or software programs. However, if teachers are to move from using technology for isolated activities to using technology as an integrated part of the curricula, then the educational system must begin to restructure its training and staff development (Moersch, 1995).

Integrating technology into a school's curriculum requires that the staff have a working knowledge of using technology in the educational setting. As the literature states, most staff development for technology is often sporadic and delivered in one-shot sessions; and the attendees are expected to explore and learn more about the topic on their own (Solomon, 1995). In order to prepare staff development topics that are of value to the teachers

it is necessary to assess the individual needs and to then synthesize these individual needs into school-wide needs. It is critical to offer workshops that present information that faculty and staff consider useful and important enough that they will be willing to attend workshops; often on their own time (Zeitz, March 1995).

The first step in good instructional design even for teacher training is to implement some form of needs assessment. In most cases this is in the form of a questionnaire (Zeitz, April 1995). The questionnaire should be designed to determine how faculty and staff are using technology, what areas they would like to learn about through workshops, and when it would be convenient for them to attend workshops. Once the needs of the staff are determined then staff training must be planned to fit those needs.

The questionnaire also allows the people developing the training program to find a consensus of what the staff needs. It is important to build the training on the entire staff, not just those teachers who have expressed an active interest in technology (Stinson, 1994).

When developing staff training it is also wise to understand the general orientations of the staff to technology. According to Evans-Andris (1995), there are two ways in which teachers react to new technology. The first and most prominent is distancing, limiting their

involvement with the technology. The second is to embrace the technology. These teachers look for opportunities to use the equipment and to learn how to master it. These styles could be further described as avoidance and integration of technology. A successful training program will take these two styles into consideration and plan the classes accordingly.

There is also a need to adapt the training sessions to the schedules of the teachers and allow for the even flow of information that must be taught. Following these decisions the training must be implemented and the results evaluated. The final step in this process is to follow-up with the trainees for support and to define new needs (Siegel, 1995).

A successful training will separate the "nuts and bolts" training needed by beginners from the more detailed training and information needed by the more computer savvy teacher (Tally, 1995). It is important to separate the beginner and more seasoned technology user. Training should also be developed that addresses the specific needs of a population. The training must go beyond introductory classes.

The current literature has many criteria necessary for creating successful staff development technology training programs. The training must be rooted in a teacher's everyday practice and put teachers in contact with other

professionals. Coaching, mentoring, individual projects, and study groups should be used in addition to traditional training models. This will provide the necessary follow-up support. Training should be spread out over time. A school system should devote as much as 50 percent of its staff development resources to what happens *after* a training session. The principles of reflection, collaboration and communication should underlie the approach to staff development and all learning should be imbedded in doing (Harrington-Lueker, 1996). In order for training to be successful, three critical success factors must be present: (1) a commitment on the part of the teachers to learning, their own as well as their students'; (2) support at the district and site levels; and (3) access to the technology (Robinson, 1992).

Many successful training plans have been developed using the above criteria. Following the assessment of the staff's needs, technology training based on the above principles has been very successful. It is valuable to review the success stories in order to glean ideas that will work in developing a new training.

When Howard Lappin of Foshay Learning Center in Central Los Angeles talks about technology training he says, "The purpose is not to learn technology. The purpose is to develop an interdisciplinary curriculum. We use

technology as a tool (Palazzo, 1996). Foshay's teachers are given a 13-day technology training, which they are paid for and is conducted during their "off-track" time. They are then asked to submit proposals for how they would use computers in their classrooms. On the basis of the proposals they are granted a suite of hardware and software to complete the project. The continued training done at Foshay is based on the projects teachers wish to do with their students. The teachers learn as they teach.

Like Foshay, many school districts have found many ways to meet the demands of training staff successfully in technology. Many have lengthened the school day in order to create more staff development days. Some are providing release-time during the school day so that teachers may learn new technology on the job (O'Neil, 1995).

Other schools are offering intensive training to groups of teachers that then go to their respective buildings to "evangelize the integration process, the software, and the platforms." The Instructional Technologist in the schools are working along side the teachers in the classroom and the district is offering needs-based small group training through out the year (Focus, 1995-96).

Caroline Embrey, now in her second year of teaching at Stevens Creek Elementary School in Cupertino, California says, "There is so much to learn. What's great is we are

all doing this together. I get help not just in how to use the hardware but also how to use it to teach." (Solomon, 1993, p.17). At weekly after-school meetings, teachers bring in ideas and introduce things they have tried successfully. This after-school time has been created by having a longer day and "banking time". This allows teachers to be paid for the time they work together towards their technology goals.

The Norristown Area School District in Pennsylvania is in the process of reconfiguring its staff development for technology. Through the use of substitutes, teachers have formed 20-member teams and attend four full-day workshops. Between each workshop they have a month and a half to practice the newly learned skills. In addition to learning technology hardware and software the teachers are trained to design curricular frameworks that will include technology (Gould, 1992).

Hurst-Hills Elementary School in Tarrant County, Texas has supported its teachers by putting a computer on every teacher's desk. This district knew it was not enough to simply buy the computers. They invested in extensive and ongoing teacher training. In order to receive the computer and liquid crystal display(LCD) panel, each teacher must complete the equivalent of a college course in computer use and computer instruction. The teachers are first taught the basics of spreadsheets, word processing, and other too-

type applications. After that, they learn more advanced applications, like multimedia. Teachers receive salary points on the pay scale for completion of the course. The training is done in three weekly three hour sessions. The Glenbard School District, in Illinois, has agreed to provide each teacher with computers when they make an agreement to complete 70 hours of training over a three year period (McCarthy, 1993).

Calcasieu Parish, Louisiana, took the unique path of generating teachers' interest in technology by demonstrating what the technology could accomplish in a real classroom. They asked teachers to submit proposals for pilot programs. Teachers whose programs were selected were then offered training, hardware, software, and any other assistance they would need to get the project off the ground. In return these teachers agreed to act as trainers for other teachers that became interested in mastering the technology. An explosion took place. They have teachers lining up to do whatever is necessary to acquire the technology for their classroom. This project was funded by the addition of a one half cent local sales tax. The idea was sold to the community person by person, group by group and was only in place for four years. The school board is careful to keep the community apprised of where the money is being spent and the progress the district has made due to the increased revenue (Theriot, 1993).

The Summer Multimedia Training Institute in Orlando, Florida, is training teachers and students together as teams that can return to their schools and carry on the training there. Last summer they taught 13 teachers and 28 students in multimedia use. Teachers were paid \$50 a day and granted 60 in-service points toward rectification. Each teacher was also given a multimedia system complete with software for the classroom. The teams also met throughout the school year to act as a support group for its members (Bias, 1996).

The most important step in creating successful staff development is to develop a need for the training in the teachers. This has been done by supporting pilot projects in schools with the time and equipment to be successful. These programs in turn show other, more reluctant teachers what is possible with technology. Other districts have demonstrated successful projects at staff meetings. Once the teachers have the desire it is necessary to effectively train them.

School districts across the country have found many effective methods for using staff developments to effectively train and motivate their staffs. Many have found the time to train teachers by lengthening the school to "bank" time of using substitutes for teacher release days. Some are awarding salary points on the pay scale so that teachers are motivated to take after-school and summer



courses or awarding participants in training programs new equipment for their individual classrooms.

Districts have applied creativity to the old model of staff development and have found new and exciting ways to train their staffs. Training a group of teachers at the district level and having those teachers return to their home site as "experts" to train the staff at the home schools has proven to be quite effective. Training school site teams has proven successful in developing staffs willing to incorporate technology into the scope and sequence of their teaching. It has further created support for these teachers at the school site. In the middle schools and high schools training students along with teachers has created strong teams of experts able to train other teachers and students with peer tutors.

The need for our educational system to empower teachers to make appropriate and effective use of technology is well documented (Moursund, 1992). Resources such as teacher education, encouragement, incentives, curriculum materials, and continuing on-the-job support must be available if technology is to make a significant contribution toward improving education. Kay Pearson, is a full-time Technology Resource Teacher. She feels that this position is an essential link for empowering all teachers with the ability to make effective use of technology. She

supports teachers in many ways. Faculty in-services are given to accommodate the teacher's schedule and she is constantly available for troubleshooting, handholding and to advise as the need arises. Most importantly she is constantly in classrooms to observe and suggest how teachers can incorporate technology into their projects. This does not happen in a 16-hour in-service class (Pearson, 1995).

From the literature reviewed, it becomes apparent that a school staff must see the need for the training they are being asked to take. They must also be trained on the equipment that they have available to them and the training must be useful to them in the classroom. It is also important that the teachers be given incentives for taking the training. The last but by no means least important requirement is that the classes offered are at the instructional level of the enrolled teachers. All of these requirements will be addressed as the *Kennedy Coyotes and Computers* technology training is developed in Chapter Four.

## CHAPTER THREE

### STATEMENT OF GOALS AND OBJECTIVES

#### Goals

The goal of this project is to develop a technology training plan at John F. Kennedy Elementary School in Indio, California. This plan will model the application of design principles for training program development.

Specifically, this plan will

- be based on a needs assessment of the staff
- will be systematically implemented
- will include the availability of on-line information regarding the training
- will have built-in peer support
- have a built-in follow-up component
- will support the staff of John F. Kennedy School

#### Objectives

Through the implementation of this training program, it is expected that participants will be able to:

A. Learn basic operations for the following applications:

- E-mail
- Internet
- Authoring Tools
- Web Page Design

B. Use an on-line information system that will enable them to:

- find training course schedule
- develop their own training plan
- find tutors
- communicate with other staff

C. Develop lessons that integrate technology into the curriculum.

## CHAPTER FOUR

### DESIGN AND DEVELOPMENT OF THE PROJECT

#### Overview

John F. Kennedy Elementary school is located in the Coachella Valley area of Southern California. It has a student population of 1050 and a staff consisting of one principal, one assistant principal, thirty-nine classroom teachers and five credentialed support teachers.

The current technology inventory at the school includes one PC computer with Internet access in every classroom, two scanners, two digital cameras and three LCD panels.

Desert Sands Unified School District has made a strong commitment to technology. They have invested in microwave technology for Internet access because of its speed and low cost. The district is supporting the use of technology in the classroom by providing staff development classes in the necessary technology programs, release-time for teachers making the effort to obtain training and salary -points for the training taken. There is an on going commitment to provide more computers and technology to the individual classrooms as well as multi-port hubs for broader Internet access.

The District is drawing further attention to technology in the classroom through an annual District

Technology Fair and through financing pilot technology programs in the schools. It is because of the Elementary School Pilot Program that John F. Kennedy will have a full-time out of the classroom technology teacher beginning the 1997-98 school year. The school will also have three classroom teachers who will receive a one-seventh salary stipend to act as a support person for grade levels K-1, 2-3 and 4-5.

This program will give each classroom teacher a second PC computer and a 12-port hub for access to the Internet. In addition the school will have 10 additional computers on campus to use as needed. The school has chosen to put these computers on carts that will allow them to be moved from room to room. These computers will be used for teaching teachers technology skills.

This project titled, *Kennedy Coyotes and Computers, A Technology Training for Teachers* was developed to meet the needs of training the staff at John F. Kennedy Elementary. It was developed according to the principles and strategies found in other successful training program. These principles include assessing the needs of the teachers and from the needs develop useful training to the teachers. As stated by Harrington-Lueker (1996) the training should be long-term and on-going, placed in the educational setting, meet the scheduling needs of the participants, include a

time for synthesis and practice, and have follow-up support available to the students. This project was done following the four phases of training program development:: needs assessment, design, implementation, and evaluation and support guidelines. The following sections will describe how each phase was approached.

### Needs Assessment

The initial step in developing a useful needs assessment and a successful technology staff development program is planning. Teachers should be actively involved in the planning process. The planning should involve establishing the relevance of the training, setting the curricular goals and deciding on the method of training.

The relevance of the training should be clear to all parties involved in the program. Teachers are interested in ideas that can be used in the classroom and put into immediate practice. In the area of technology this is often referred to as creating a need for the technology. To help create this need and relevance to this project, the teachers were invited to a technology staff meeting at the beginning of the school year prior to the return of students. Various teachers from throughout the district and at the school site were asked to demonstrate technology projects they were successfully using in their classrooms. In addition, they were asked to explain what technology the

teacher needed to master so that they could implement the project in their own classroom.

The second step in developing a useful needs assessment is to determine the exact needs of the staff involved. This was done through the use of a questionnaire (see Appendix A). The questionnaire was given to the thirty-nine certificated teachers at the school. It should be mentioned here that a conscious choice was made to focus on certificated staff only at this time. Due to the large staff at this school it was decided to train teachers only in the first year and to include teacher's aides the second year. This choice was made so that the number of people wanting training did not exceed the limits of class space available. Twenty-seven teachers responded to the questionnaire. Table 1 shows the responses to the questionnaire.

Table 1, Questionnaire Responses

| <u>QUESTION</u>                     | <u>No. of Responses</u> |
|-------------------------------------|-------------------------|
| Type of computer used: School: IBM- | 27                      |
| Home: IBM-                          | 18                      |
| Mac-                                | 3                       |
| Apple-                              | 2                       |
| Word processing software used:      |                         |
| Microsoft Works:                    | 25                      |
| Microsoft Publisher                 | 1                       |
| Microsoft Word                      | 7                       |
| Appleworks Word                     | 1                       |



|                             |                                       |    |
|-----------------------------|---------------------------------------|----|
| Graphic software used:      | Microsoft Publisher                   | 2  |
|                             | Calendar Creator                      | 2  |
|                             | Kid Pix                               | 4  |
|                             | Clip Art                              | 2  |
|                             | Printshop                             | 4  |
| Presentation software used: | Compel                                | 5  |
|                             | PowerPoint                            | 3  |
|                             | HyperStudio                           | 3  |
| Internet Browser used:      | Netscape                              | 29 |
| Best times for workshops:   | Before School<br>(6:30 to 7:45)       | 6  |
|                             | After School<br>(3:15 to 5:00)        | 21 |
|                             | Evening<br>(7:00 to 9:00)             | 3  |
|                             | Weekends- Saturday<br>(9:00 to 12:00) | 5  |

#### Interest in workshop topics:

Participants were asked to identify their interest in the workshop topics. Classes will be scheduled in order of interest. Topics are rated in order of interest, 1 to 8.

Table 2 is the responses of the polled teachers.

|                 | 1st Choice | 2nd Choice | 3rd Choice | 4th Choice | 5th Choice | 6th Choice | 7th Choice | 8th Choice |
|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Internet        | 16         | 3          | 1          | 2          | 0          | 0          | 0          | 2          |
| E-mail          | 8          | 2          | 4          | 1          | 0          | 0          | 3          | 4          |
| Intranet        | 2          | 2          | 4          | 1          | 5          | 4          | 0          | 1          |
| Web Page Design | 1          | 3          | 5          | 3          | 4          | 1          | 0          | 3          |
| Office 97       | 2          | 4          | 1          | 3          | 3          | 1          | 4          | 3          |
| Authoring       | 3          | 3          | 3          | 3          | 0          | 4          | 3          | 1          |
| Digital Camera  | 0          | 0          | 2          | 4          | 4          | 5          | 4          | 0          |
| Scanner         | 0          | 1          | 2          | 6          | 5          | 3          | 2          | 2          |

Table 2. Survey Responses by Priority

Figure 1 illustrates the disbursement of choices made by the polled teachers. It shows the interest of the teachers for each class topic as a first, second, third etc. choice. It reveals the topic which most interested these teachers and allowed the training to be planned so that the topics with the most interest could be offered first. In planning a technology training program it is important to keep the interest of the participants high. This can be done by offering the classes in which the participants have the highest interest.

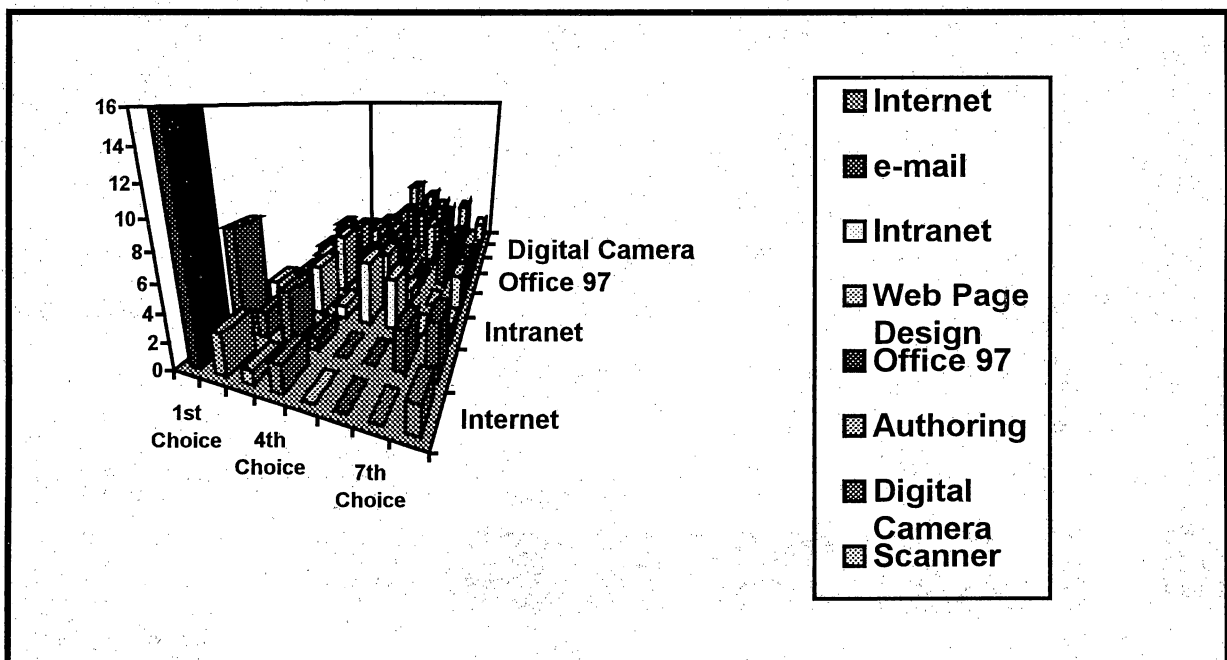


Figure 1. Training Choices by Priority

In summary, the above data indicates that the majority of teachers at Kennedy School were interested in receiving training for e-mail, use of the Internet, Web Page design, Authoring software and how to use computer hardware already at the school. The optimum time for training was after school on weekdays from 3:00PM to 5:00PM.

### Developing a Technology Training Plan

The second step in developing a training program is to decide on the curriculum. From the above data collection, decisions were made on what training to offer(content), when to hold sessions and training methods to be used. (See Appendix B for the complete training program.)

The following sections describe the factors that were considered in determining the content for the training program.

#### A. Networks

The subjects of the Internet and Intranet were combined because the skills to use both are similar. This will allow the teachers to be trained without repetition or boredom.

#### B. Hardware

Desert Sands Unified School District has provided a IBM clone computer with Internet capability to each teacher in the district. This will be the machine on which the teachers receive their training. The District has also

provided a digital camera, scanner and LCD panels for each of the schools in the district. The training course will serve as an introduction to the hardware and how teachers can use the add-ons to enhance their curriculum.

The digital camera and the scanner were combined with the addition of the LCD(Liquid Crystal Display) panel. It was felt that these three items could be addressed as add-ons to the computer that increased the usefulness of technology as a tool in the classroom.

#### C. E-mail

E-mail has rapidly become the communication tool of choice between colleagues and administration at the school site. Desert Sands Unified School District has made a commitment to this communication tool by providing every teacher in the district with e-mail. The training course will serve as an introduction to e-mail and how it can assist individual teachers during their school day.

#### D. Authoring Tool

Desert Sands Unified School District has agreed to provide HyperStudio by Roger Wagner Publishing, Inc. to its teachers. For this reason the authoring software class that is being offered to Kennedy teachers will focus on HyperStudio. HyperStudio is an authoring tool that lets the user to develop an electronic stack of cards that contain buttons, graphics, and text. The user is able to

click on the buttons to move from one card to another or to initiate actions. The cards can be used for all types of instructional purposes, such as teaching a foreign language or touring a California Mission. A teacher can use paint tools to create a picture on a card, and can use clip art and text. Sound can be added to the card by recording a voice or using prerecorded sounds.

HyperStudio can be used by teachers or students. Teachers can use HyperStudio to develop material that improves instruction. Students can explore the world of multimedia by using this program as a tool to develop their own presentations.

#### E. Web Publisher

Desert Sands Unified School District has invested heavily to bring microwave technology to the classroom. With this technology each teacher now has access to the Internet and the district Intranet. With the ability to design Web pages teachers will be able to create home pages for the classroom, publish student work on-line, and share information with other teachers.

From the information gathered through the questionnaire and knowing the expectations of the district it was decided to offer classes on the following topics (See Appendix B for a complete description of each class):

- 1.) Internet/Intranet
- 2.) E-mail
- 3.) Computer Add-Ons: Digital Camera, Scanner and LCD Panel
- 4.) Web Page Design
- 5.) Authoring/presentation Software

Once the specific class topics were decided it was necessary to schedule the classes. The questionnaire presented four choices for training times: before school (6:30 to 7:45); after school (3:15 to 5:00); evening (7:00 TO 9:00) and weekends (9:00 to 12:00). The teachers responded with the following choices (See Figure 2).

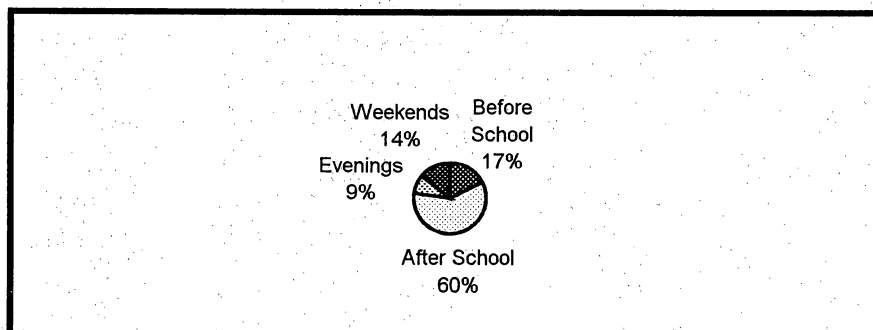


Figure 2. Training Times

The majority of the respondents were interested in attending classes after school from 3:15 p.m. to 5:00 p.m. Thus, training sessions were scheduled in this time block.

Another important element of the development phase is selecting a training method. When reviewing the current literature regarding staff development and technology training it became clear that successful training programs have certain elements in common: (1) the subject of the training is of interest to the participants, (2) the participants are given time to practice their new knowledge, (3) the equipment they are trained on is available in the classroom, (4) there is support for the participants to go past the basics of technology and begin to find useful ways to use the technology, (5) there is time for the participants to develop ways to integrate their new knowledge into their classroom, (6) there is long term, readily available support for the learner and finally (7) there are meaningful incentives available to the participant for taking the training.

It is vital to the success of any training program that during the development phase these principles are addressed. They were used to develop the technology training program for Kennedy School to ensure a successful program.

### Design

The third step in a successful technology staff development program is design. The design phase involves creating a project timeline including the follow-up

activities, developing the training curriculum and determining content of the final product.

The purpose of a project timeline is to keep the participants on task and on schedule. The first step in creating the timeline is to identify the key events (including support and follow-up) that must happen in order to make the project successful. These key events are prioritized and evaluated in reference to their time requirements and time is allotted for the project. Subsequently, the events are incorporated into a projected timeline.

For this project a timeline was developed for each class that was offered. The timeline was based on the amount of time needed to teach the key items of the class. Each of the key events for each class was assigned a time requirement. The amount of time between the onset of the class and completion of each key event was defined; this became the length of the class. The following are the prioritized key items for each class to be taught and the estimated time requirements for each.

|                  |                      |
|------------------|----------------------|
| E-mail           | 4 hours of training  |
| Computer Add-ons | 6 hours of training  |
| Web Page Design  | 12 hours of training |
| HyperStudio      | 20 hours of training |



Each class was broken down to the estimated time that would be needed to teach class element. Below are the class elements for each class and the estimated time.

**E-mail Class - 4 Hours**

**Estimated Time**

- |                               |            |
|-------------------------------|------------|
| 1. Sending a message.         | 20 minutes |
| 2. Replying to a message.     | 20 minutes |
| 3. Forwarding a message.      | 20 minutes |
| 4. Deleting messages.         | 20 minutes |
| 5. Printing a message.        | 20 minutes |
| 6. Keeping a message,         | 30 minutes |
| 7. Saving mail using folders. | 30 minutes |
| 8. Using the address book.    | 30 minutes |
| 9. Creating address lists.    | 30 minutes |

**Internet/Intranet - 6 Hours**

**Estimated Time**

- |                                     |            |
|-------------------------------------|------------|
| 1. Introduction to Internet         | 45 minutes |
| 2. Explanation of Hypertext/rmedia. | 20 minutes |
| 3. Index and glossary of terms.     | 25 minutes |
| 4. How does the Web work?           | 30 minutes |
| 5. What is available on the Web?    | 60 minutes |
| 6. Search engines.                  | 60 minutes |
| 7. Interesting places on the Web.   | 60 minutes |
| 8. Integrating into the curriculum. | 60 minutes |

**Computer Add-ons - 6 Hours****Estimated Time**

1. Scanner 2 Hours
  - a. Install the software.
  - b. Scan documents.
  - c. Enhance pictures.
  - d. Save documents for importing.
  - e. Ideas for curriculum use.
2. Digital Camera - 2 Hours
  - a. Install and use the camera.
  - b. Create a slide table.
  - c. Enhance photographs with software.
  - d. Import and save photographs.
  - e. Ideas for curriculum use.
3. LCD Panel 2 Hours
  - a. Install the LCD Panel.
  - b. Ideas for classroom use.

**Web Page Design Class - 12 Hours****Estimated Time**

1. Getting Acquainted with HTML. 1 hour
2. Building Your First HTML Document. 2 hours
3. Using Graphics. 2 hours
4. Developing Tables and Forms. 1 hour
5. Using Colors and Backgrounds. 3 hours
6. Planning Your Web Site. 1 hour
7. Integrating Web Sites into the Curriculum. 2 hours

**Authoring Software - 20 hours****Estimated Time**

|  |         |
|--|---------|
| 1. Installing HyperStudio.                         | 1 hour  |
| 2. Creating cards.                                 | 2 hours |
| 3. Adding Text.                                    | 2 hours |
| 4. Adding buttons.                                 | 2 hours |
| 5. Linking cards.                                  | 2 hours |
| 6. Adding Graphics.                                | 2 hours |
| 7. Adding sound.                                   | 2 hours |
| 8. Creating special effects.                       | 2 hours |
| 9. Integrating HyperStudio<br>into the Curriculum. | 5 hours |

Each class of teacher participants will be made aware of the time commitment necessary to complete the support area of each course. The teachers will decide how best to set up on-going support for themselves. This support will take the form of group meetings to discuss what is working and how to solve problems that are arising when bringing the technology into the classroom. Each class has a stated amount of hours needed for the support:

|                          |                    |
|--------------------------|--------------------|
| <b>Internet/Intranet</b> | 4 hours of support |
| <b>E-mail</b>            | 2 hours of support |
| <b>Web Page Design</b>   | 3 hours of support |
| <b>Computer Add-ons</b>  | 1 hours of support |
| <b>HyperStudio</b>       | 5 hours of support |

The support will meet the requirement of long term support for the teachers as they implement technology. The Technology Coordinator and at least one of the teacher technology mentors will meet with these groups.

The third critical component in the design of a useful staff development program is determining the content. The content of these classes were determined by the key events previously listed under each specific class. The content must be reflected by the activity that will be undertaken by the participants in the class. The content that the program will deliver must meet the needs of the participants.

In this case all products must be usable in the individual classroom and meet the needs of the teacher at their own grade level. However, each class must have criteria in place that the student must demonstrate in order to show mastery of the class. The criteria for showing mastery of each class is:

#### **Internet/Intranet**

1. Develop a project using the Internet as a research tool in a class project.
2. Develop a list of Internet addresses useful to the classroom/grade level.
3. Demonstrate the ability to access and use the District Intranet.

4. Final Project Develop a project for students that integrates use of the Internet into the curriculum. It must include a homepage, lesson plan and class project.

#### **E-mail**

1. Demonstrate the ability to use e-mail as a communication tool, i.e., send, receive, save and delete e-mail.
2. Final Project - Use e-mail to the instructor.

#### **Computer Add-ons**

1. Develop and demonstrate to the class projects that will integrate each add-on into the curriculum.
2. Final Project - Create a lesson plan for a class project using the computer add-ons.

#### **Web Page Design**

1. Design and post a Web page on Desert Sands Unified School District's Intranet. The page will include text, graphics, buttons and links to other Web sites.
2. Develop a project for students that integrates Web pages into the curriculum.
3. Final Project - Teacher made Homepage for the classroom.

## **HyperStudio**

1. Participants will design a multi-media presentation that is applicable to their classroom content. The presentation will include buttons, links, sound, animation and a variety of backgrounds and graphics.
2. Final Project - Develop a project for students that integrates HyperStudio into the curriculum. Present the stack to the class.

## Implementation

The fourth step in a successful technology training program is implementation. Implementation involves choosing the equipment, specific day and time of the training, scheduling of rooms and performing the technology training. It also includes registering for the courses by the teachers.

It is the trainer's responsibility to choose equipment for the training. It is vital to the success of technology training that the students have continual access to the equipment. The trainer should ensure that the teachers have access to the same technology they were trained on. These needs will differ for each class.

In the case of John F. Kennedy School, hardware access comes in the form of e-mail and the Internet/Intranet via microwave technology that is installed district-wide.

The teachers also have access to two digital cameras, two scanners and four LCD panels at this time. They are available on a check-out basis after the completion of the introductory course. Funds have been allocated to increase the number of these items available.

Each classroom in the school is equipped with a computer with multimedia capability and that number will increase to two in the school year 1997-98. As for software access, every computer has e-mail software, Microsoft Works and Netscape Explorer. HyperStudio will be installed at the beginning of the authoring software course.

As an incentive to complete the course gigabyte drives will be installed in one computer of each teacher that completes the course. Teachers will receive further incentives in the form of release time and more equipment for the classroom. Priority for new equipment will be given to teachers who have completed technology training.

Implementation also involves organizing the training: lessons on software applications, using different hardware, and in some cases, design concepts. The training should address the areas of interest identified in the needs assessment. Each training that is offered is sequential,

with the focus on skill development. It is vitally important that the concepts build on each other.

For this project, the training sessions offered to Kennedy teachers are based on the small group design. There will be one trainer to no more than 8 teacher participants. Teachers work in pairs at computers in the beginning of classes and move to their own computer when they feel comfortable. This allows them to support each other and lower the stress level that occurs when learning new information.

To prevent learner frustration, the amount of information introduced at any one time will be limited to small manageable pieces. These pieces of information are interspersed with time for the learner to actively engage in practicing using the new knowledge.

As part of this project, an on line-on Web-site has been developed for the District Intranet(See Appendix C). With this Web site, teachers will be able to access information regarding class outlines, schedules, tutors, and support groups. The Web site was developed for better communication and information dissemination and follows the format of the handout that each teacher will receive at the beginning of the school year. This allows for ease of use and lowers user frustration.



## Evaluation

The fourth and final step in a successful technology training staff development is evaluation. Trainers and teacher participants are both involved in the evaluating process. Evaluation includes determining if the program and curricular goals were met, evaluating the final products and making revisions in the classes.

The classes developed by this project for J.F. Kennedy will be offered to the staff during the fall and winter quarters of the 1997-98 school year. Upon the completion of the evaluation process the courses will be altered where necessary to improve the classes. Evaluation will be done by interviewing the participants and evaluating the final products of the HyperStudio and Web page design classes.

Participants will be asked to respond to the following questions:

1. Did the class meet your expectation?
2. Was staff available for follow-up support?
3. Did you have access to the same technology you were trained on?
4. Were the newly acquired technology skills immediately transferable to the classroom?
5. How did your new technology skills improve your classroom teaching?

6. What follow up or support would you like to see included in future classes?

Based on the evaluators suggestions revisions to the training program will be made to improve the sessions. Upon completion of the first round of training the technology needs of the staff will be re-assessed and the entire technology training development process revisited in order to design classes that will meet the new needs of the staff. This continuous cycle of needs assessment, design, implementation and evaluation makes this a living document and will be under constant evaluation and revision to best meet the needs of the participants.

#### Formative Evaluation

*Kennedy Coyotes and Computers: A Technology Training Program for Kennedy School* was reviewed by the Principal, and the Assistant Principal from John F. Kennedy School. They evaluated the project for content, appeal, ease of use, and relevance. Each reviewer responded to an oral survey and provided their opinion of the project. Each reviewer read and signed a consent form, a sample of which can be found in Appendix C. The originals are on file.

Both reviewers felt that the project was comprehensive in scope. The course descriptions were well developed and understandable by a novice technology user. They felt that

the design of the Web page was clear and followed the format of the handout that each teacher would receive at the beginning of the school year.

One reviewer particularly appreciated the use of the district Intranet as a means of informing the teachers of updates and changes in the training schedule. It was felt this could provide incentive to teachers to learn how to use these tools. It was further noticed, however that many teachers did not know how to access the Intranet. This has been rectified by the addition of teaching this information at the first staff-only day in September prior to students returning to school.

#### Strengths of the Project

This project provides a training program that was designed and founded on the specific needs of the staff at John F. Kennedy School. It is a direct result of an assessment of their technology needs. The training program coincides with their teachers' desires for the scheduling of the classes and the technology topics the classes would cover. Because it is based on needs expressed by the staff the training program brings bring them the maximum technology skill in the shortest amount of time.

Another strength of this program is the scope and sequence of the program was design for a specific school, it will be possible to use the syllabus of each class to

teach any student who expresses an interest in the subject matter. This will allow other schools to adapt these classes to the needs of their own faculty.

An added strength of this program is that it will be possible to take the steps of this project: needs assessment, design, implementing the plan and evaluation, and use it as a model to develop an entirely different plan for another school.

The use of a Web site is another useful feature of this plan. Posting the description of the classes and the schedule for those classes on the Intranet will allow teachers easy access to the information they need about the training program.

#### Limitations of the Project

No technology training plan can address all of the unique situations that exist in the school, and this plan is no exception. Classes with certain specialized needs, such as those with exceptional populations or specific technology needs may find the classes in this plan limited in scope.

This plan is addressing very specific skills needed by a particular school to incorporate technology into its curriculum. Once this part of the training has been completed, it will need to be repeated for beginning teachers and those who have not taken the classes., New

classes will need to be developed to meet the needs of teachers who wish to go beyond the basics.

Developing support systems for teachers integrating technology into their curriculum is a goal of this project. Each class will be asked to put in place the support that best meets their needs. It is for this reason that the developer is unable at this time to incorporate the exact nature of this support into the Web page design.

Because of the rapid advances in technology information it will be difficult for this training plan to stay current with the needs of the teachers without constant revision. Needs assessments of the staff must be done in a timely manner for this document to retain its relevance.

The Web site is seen best on the District Intranet, Microsoft Explorer and in Microsoft Publisher. Viewing the Web site through other means may lead to misalignment of the format.

### Recommendations

The value of this project lies in the fact that it is a living document that has the greatest value if it is continually revised and updated based on the needs of the Kennedy staff. Therefore it is strongly recommended that the school continually review this document and update it based on current school needs.

It is further recommended that as support systems for the staff evolve they be added to the Web page for the convenience of the staff. This step has not been taken at this point because the composition of support groups is yet to be defined. The participants themselves will make support choices when training is completed.

## APPENDIX A: QUESTIONNAIRE

## Technology Needs Assessment Questionnaire

Name \_\_\_\_\_ Room \_\_\_\_\_ Grade \_\_\_\_\_

Do you have access to computers?

Yes \_\_\_\_\_ Home \_\_\_\_\_ Work \_\_\_\_\_ Other \_\_\_\_\_

No \_\_\_\_\_

The computer I can use:

In my class: ☐ Apple II      ☐ Macintosh      ☐ IBM/PC or  
☐ Other      ☐ IBM Clone

At home:

|                                   |                                    |                                    |
|-----------------------------------|------------------------------------|------------------------------------|
| <input type="checkbox"/> Apple II | <input type="checkbox"/> Macintosh | <input type="checkbox"/> IBM/PC or |
| <input type="checkbox"/> Other    |                                    | IBM clone                          |

I use: ☐ No ☐ Yes

## Name of Software

Word Processing ☐ ☐

e.g. Microsoft Works

Graphics □ □

e.g. KidPix

Presentation Software ☐ ☐

e.g. Compel or HyperStudio

Educational Software ☐ ☐

e.g. Oregon Trail

Web Browser

☐ ☐

e.g. Netscape

I feel my strength in using technology is: \_\_\_\_\_

---

---

---

I would like to learn more about: \_\_\_\_\_

---

---

---

The best times for me to attend workshops are (check all that apply):

☐ Before School (6:30 -7:45)

☐ After School (3:15-5:00)

☐ Evening (7:00-9:00)

☐ Weekends (9:00-12:00 )

Please rank the following workshop topics in the order of your interest. Use a scale of 1 to 8. 1 being the workshop in which you have the greatest interest.

☐ Internet      ☐ E-mail      ☐ Intranet      ☐ Web Page

☐ Web Page Design      ☐ Authoring Software

☐ LCD Panel      ☐ Scanner      ☐ Digital Camera



Write additional topics below along with your level of interest.

---

---

---

What would you like to/intend to accomplish this year involving technology? \_\_\_\_\_

---

---

---

Rate your computer skill level :

|          |   |   |              |                 |   |   |   |            |   |    |
|----------|---|---|--------------|-----------------|---|---|---|------------|---|----|
| 0        | 1 | 2 | 3            | 4               | 5 | 6 | 7 | 8          | 9 | 10 |
| Non-user |   |   | Use e-mail & |                 |   |   |   | Advanced   |   |    |
|          |   |   |              | word processing |   |   |   | Multimedia |   |    |

Thank you for your time and effort in filling out this questionnaire.

## APPENDIX B: HANDBOOK

### KENNEDY COYOTES AND COMPUTERS:

#### A Technology Training Program for Kennedy School

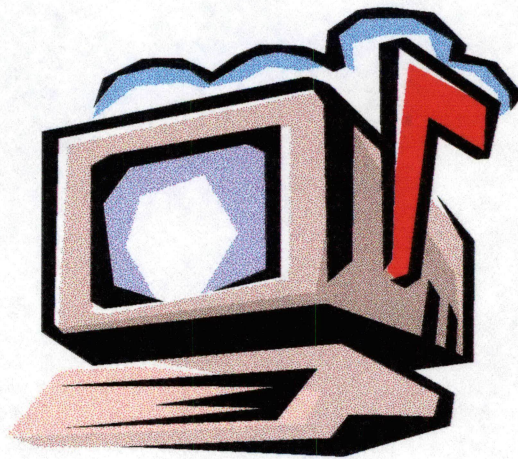
# Kennedy Coyotes and Computers

or

## A Technology Training Program For Kennedy School

### Staff Development

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## Introduction

Desert Sands Unified School District has made a commitment to bring 21<sup>st</sup> Century technology to the classroom. The district attained its five year goal of having every classroom on line in a period of three years. They have invested in microwave technology for Internet access because of the speed and low cost. The district is supporting the use of technology in the classroom by providing staff development classes in the necessary technology programs, release-time for teachers making the effort to obtain training and salary -points for the training taken. There is an on-going commitment to provide more computers and technology to the individual classrooms as well as multi-port hubs for broader Internet access.

The District has drawn further attention to technology in the classroom through its first annual District Technology Fair where teachers throughout the district were able to showcase the technology they are using successfully in the classroom.

This booklet is a guide to technology training that is available at John F. Kennedy Elementary School. Use it to discover the most effective way for you to increase your technology skills and become part of the rapidly growing legion of technology savvy teachers at Kennedy school.

The booklet contains a description of each class that is offered along with the content of the course, a class schedule and the assignments that will be required.

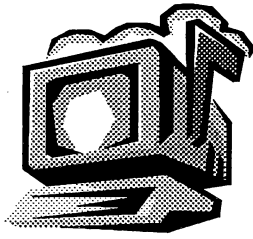
There is an enrollment form at the end of the booklet. Please fill in the required information and return it to the school's Technology Coordinator. For your convenience the information regarding classes, technology support available at the school and a calendar of when technology groups will meet is available for you on the District

Intranet. The address is <http://dsusd@surf.k12.us.com>. This site will have the latest, up-to-date information concerning technology at John F. Kennedy School.

Each class has limited enrollment and will be filled on a first come first served basis. Contact the technology Coordinator at:

[techcoord@surf.dsusd.k12.ca.us](mailto:techcoord@surf.dsusd.k12.ca.us)

Please feel free to copy the form if you are interested in multiple enrollments.



## **E-MAIL**

### **Introduction:**

E-mail has rapidly become the communication tool of choice between colleagues and administrators at the school site. Desert Sands Unified School District has made a commitment to this communication tool by providing every teacher in the district with an Internet connection and access to e-mail.

This course will serve as an introduction to e-mail and how it can assist individual teachers during their school day.

### **Course Objectives:**

Teachers will learn how to use e-mail efficiently and effectively. Topics will include:

1. Sending a message.
2. Replying to a message.
3. Forwarding a message.
4. Deleting messages
5. Printing a message.
6. Keeping a message, saving vs. exporting.
7. Saving mail using folders.
8. Using the address book.
9. Creating address lists for groups.

**Final Project:**

Teachers will demonstrate a working knowledge of e-mail and its components by using e-mail to communicate with the trainer.

**Time:**

The class will meet for two hours once a week for two weeks. The group will set additional meeting times as needed to support each other in using e-mail.

**Class Schedule:**

| <u>Session One</u>   | <u>Date</u>  | <u>Topics</u>               |
|----------------------|--------------|-----------------------------|
| Monday,              | September 15 | Sending, saving messages.   |
| Wednesday,           | September 22 | Using files & address book. |
| <u>Session Two</u>   |              |                             |
| Monday,              | November 3   | Sending, saving messages.   |
| Wednesday,           | November 5   | Using files & address book. |
| <u>Session Three</u> |              |                             |
| Monday,              | December 8   | Sending, saving messages.   |
| Wednesday,           | December 10  | Using files & address book  |





## **WEB PAGE DESIGN**

### **Introduction:**

Desert Sands Unified School District has invested heavily to bring microwave technology to the classroom. With this technology each teacher now has access to the Internet and district Intranet. With the ability to design Web pages teachers will be able to create home pages for the classroom, publish student work On-line and share information with other teachers.

### **Course Objective:**

Teachers will learn how use HTML. HTML is the language used to post items on the Internet/Intranet. They will create their own Web page.

### **Final Project:**

Teachers will develop a Web page. The Web page will include text, graphics, links and tags. The Web page will be posted on the District Intranet.

### **Time:**

The Web Page Design class will meet once a week for 6 weeks. Additional time may be scheduled as needed for completion of WEB pages.

### **Class Schedule:**

October 9: Getting Acquainted with HTML

- a. What is HTML?
- b. Launching and using the software you need.

October 16: Building Your First HTML Document

- a. Basic HTML tagging.
- b. Using common HTML tags.
- c. Making links and anchors.

October 23: Using Graphics in Your HTML Documents

- a. Using a graphics program.
- b. Developing graphics for HTML Documents.

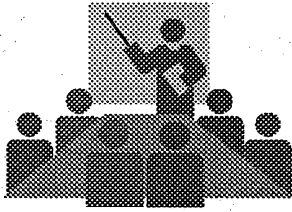
October 30: Developing Tables and Forms

- a. Developing tables.
- b. Developing forms.
- c. Planning and Organizing your Web page.

November 6: Completion of Teacher Web pages.

November 13: Posting Web pages on the District Intranet.

*Woven throughout the Web Page Design class will be discussion and ideas of how to use presentation software in the classroom.*



## **AUTHORING SOFTWARE**

### **HyperStudio**

#### **Introduction:**

Desert Sands Unified School District has made a commitment to provide HyperStudio by Roger Wagner Publishing, Inc. to all teachers at Kennedy Elementary School.

HyperStudio is an authoring tool that allows you to develop an electronic stack of cards that contain buttons, graphics, and text. You click on the buttons to move from one card to another or to initiate actions. The cards can be used for all types of instructional purposes, such as teaching a foreign language or touring a California Mission. You can use paint tools to create a picture on a card, and you can use clip art and text. You can add sound to the card by recording your own voice or using prerecorded sounds.

HyperStudio can be used by teachers or students. Teachers can use HyperStudio to develop material that improves instructions. Students can explore the world of multimedia by using the program as a tool to develop their own presentations.

#### **Course Objective:**

Teachers will learn how to create cards, stacks, tools, and buttons as they use HyperStudio to create slide shows for use in their own classroom curriculum. Teachers will know

how to effectively use HyperStudio as a learning tool in the classroom.

**Final Project:**

Teachers will create a HyperStudio project. The project can be used as a teaching tool in the classroom to assist the teacher in improving the curriculum.

**Time:**

The class will meet two times a week for five weeks. Each class will meet for 2 hours each. There will be an additional hour available after each class session for students to work on their own projects.

**Class Schedule:**

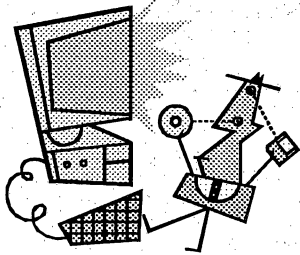
- September 29:
1. Installing HyperStudio.  
Minimum computer requirements.
  2. Definition of terms.
  3. Previewing HyperStudio stacks
  4. Brainstorming topics for class use.
  5. Choosing work partners based on top choices.
- October 2:
1. Creating Cards
    - a. Change colors.
    - b. Choose backgrounds.
    - c. Create a border.
    - d. Add text.
    - e. Add clip art.
    - f. Save and print cards.

- October 6:
1. Adding Buttons
    - a. Create an invisible button with a sound clip.
    - b. Create a visible button.
  2. Add a transition.
  3. Create edit buttons and action.
- October 8:
1. Creating New Cards
    - a. Add Text.
    - b. Record a sound.
    - c. Edit the Text Info box.
    - d. Linking cards.
- October 13:
1. How to enhance cards.
    - a. Work with Paint tools.
    - b. Re-size and copy art.
    - c. Create another sound button.
- October 15:
1. Continuing to enhance your cards.
    - a. Work with clip art
    - b. Create a HideShow New Button Actions
    - c. Create accents.
    - d. Add invisible sound buttons.
- October 20:
1. More ways to enhance your cards.
    - a. Import a background.
    - b. Use the RollCredits NBA.
    - c. Add a scanned picture.
    - d. Change preferences.
- October 22:
- Teachers will have time to complete their own slide presentations.

October 27: Teachers will continue to work on their own projects.

October 29: Presentation of group projects to the class.

*Woven throughout the HyperStudio class will be discussion and ideas of how to use presentation software in the classroom.*



## **COMPUTER ADD-ONS**

### **Digital Camera, Scanner and LCD Panel**

#### **Introduction:**

Desert Sands Unified School District has provided a digital camera, scanner and LCD panels for each of the schools in the district. This course will serve as an introduction to the hardware and how teachers can use the add-ons to enhance their curriculum and make it more vital to their students.

#### **Course Objective:**

This is an introductory course that will enable teachers to use the equipment with ease in their classrooms. The participants in the class will form a support network for each other.

#### **Final Project:**

Teachers will demonstrate the ability to install and use the scanner, digital camera and LCD panel by installing the equipment in their own classroom. Further, they will create a lesson plan that incorporates the use of these add-ons into classroom use. Teachers will share the results of using the hardware in the follow-up sessions of the class.

**Time:**

This class will meet for 2 hours once a week, for a total of 3 weeks. The group will set additional meeting times as needed to support the implementation of the new computer hardware in classrooms. The class will meet for a total of ten hours.

Scanner:

- a. Install the scanner and software.
- b. Scan documents.
- c. Enhance pictures with software.
- d. Save documents for importing.
- e. Ideas for integrating the scanner into the curriculum

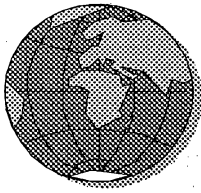
Digital Camera:

- a. Install and use the camera.
- b. Create a slide table.
- c. Enhance photographs with software.
- d. Import and save photographs.
- e. Ideas for integrating the digital camera into the curriculum.

LCD Panel:

- a. Install the LCD Panel.
- b. Ideas for classroom use.
- c. Ideas for integrating the LCD panel into curriculum.





## **INTERNET/INTRANET**

### **Introduction:**

Desert Sands Unified School District has invested heavily to bring microwave technology to the classroom. With this technology classrooms are now linked to school-wide networks to share software and resources. They are also linked to the community, state and worldwide communications and information networks such as the Internet. The technology allows teachers and students to exchange messages worldwide, work on cooperative group projects, gain the guidance of mentors, do research on-line and bring global resources to the classroom.

### **Course Objective:**

This is an introductory course that will introduce teachers to the Internet/Intranet. Its primary objective is to increase teacher competence with the Internet so that they will feel secure in using it as a tool in the classroom. Topics will include:

1. How to use Search Engines.
2. How to make bookmarks.
3. How to download files.
4. How to zip and unzip files.
5. How to save files.
6. Ideas for integrating the Internet into the curriculum.

**Final Project:**

Teachers will explore and use resources on the Internet in the classroom. They will share Web sites that can be used to enhance curriculum. Teachers will develop bookmarks for themselves and the students.

**Time:**

This class will meet the third Tuesday of every month. Each session will be one hour of an organized lesson, followed by time to meet as grade level teams and to explore the uses of the Internet at that grade level.

**Class Schedule:**

|          |           |    |
|----------|-----------|----|
| Tuesday, | September | 16 |
| Tuesday, | October   | 21 |
| Tuesday, | November  | 18 |
| Tuesday, | December  | 16 |

# Kennedy Coyotes and Computers

## Enrollment Form

Name \_\_\_\_\_

Home Phone \_\_\_\_\_ Room # \_\_\_\_\_

### Select a Course (please check):

- |  |           |           |       |
|--|-----------|-----------|-------|
| <input type="checkbox"/> E-Mail            | Session 1 | Beginning | 9/15  |
| <input type="checkbox"/> E-Mail            | Session 2 | Beginning | 11/3  |
| <input type="checkbox"/> E-Mail            | Session 3 | Beginning | 12/8  |
| <input type="checkbox"/> HyperStudio       |           | Beginning | 9/29  |
| <input type="checkbox"/> Computer Add-ons  | Session 1 | Beginning | 9/18  |
| <input type="checkbox"/> Computer Add-ons  | Session 2 | Beginning | 11/12 |
| <input type="checkbox"/> Internet/Intranet |           | Beginning | 9/16  |
| <input type="checkbox"/> Web Page Design   |           | Beginning | 10/9  |

**Return this enrollment form to the Technology Coordinator.**

**Enrollment forms must be submitted two weeks prior to the  
start of any course.**



# SEPTEMBER 1997

| SUN | MON                    | TUE                         | WED                   | THU                       | FRI | SAT- |
|-----|------------------------|-----------------------------|-----------------------|---------------------------|-----|------|
|     | 1                      | 2                           | 3                     | 4                         | 5   | 6    |
| 7   | 8                      | 9                           | 10                    | 11                        | 12  | 13   |
| 14  | 15<br>E-MAIL<br>CLASS  | 16<br>INTERNET/<br>INTRANET | 17<br>E-MAIL<br>CLASS | 18<br>COMPUTER<br>ADD-ONS | 19  | 20   |
| 21  | 22                     | 23                          | 24                    | 25<br>COMPUTER<br>ADD-ONS | 26  | 27   |
| 28  | 29<br>HYPER-<br>STUDIO | 30                          |                       |                           |     |      |





# OCTOBER 1997

| SUN       | MON                           | TUE                                | WED                           | THU                             | FRI       | SAT       |
|-----------|-------------------------------|------------------------------------|-------------------------------|---------------------------------|-----------|-----------|
|           |                               |                                    | <b>1</b><br>HYPER-<br>STUDIO  | <b>2</b><br>COMPUTER<br>ADD-ONS | <b>3</b>  | <b>4</b>  |
| <b>5</b>  | <b>6</b><br>HYPER-<br>STUDIO  | <b>7</b>                           | <b>8</b><br>HYPER-<br>STUDIO  | <b>9</b><br>WEB PAGE<br>DESIGN  | <b>10</b> | <b>11</b> |
| <b>12</b> | <b>13</b><br>HYPER-<br>STUDIO | <b>14</b>                          | <b>15</b><br>HYPER-<br>STUDIO | <b>16</b><br>WEB PAGE<br>DESIGN | <b>17</b> | <b>18</b> |
| <b>19</b> | <b>20</b><br>HYPER-<br>STUDIO | <b>21</b><br>INTERNET/<br>INTRANET | <b>22</b><br>HYPER-<br>STUDIO | <b>23</b><br>WEB PAGE<br>DESIGN | <b>24</b> | <b>25</b> |
| <b>26</b> | <b>27</b><br>HYPER-<br>STUDIO | <b>28</b>                          | <b>29</b><br>HYPER-<br>STUDIO | <b>30</b><br>WEB PAGE<br>DESIGN | <b>31</b> |           |





# NOVEMBER 1997

| SUN | MON                  | TUE                         | WED                       | THU                      | FRI | SAT |
|-----|----------------------|-----------------------------|---------------------------|--------------------------|-----|-----|
|     |                      |                             |                           |                          |     | 1   |
| 2   | 3<br>E-MAIL<br>CLASS | 4                           | 5<br>E-MAIL<br>CLASS      | 6<br>WEB PAGE<br>DESIGN  | 7   | 8   |
| 9   | 10                   | 11                          | 12<br>COMPUTER<br>ADD-ONS | 13<br>WEB PAGE<br>DESIGN | 14  | 15  |
| 16  | 17                   | 18<br>INTERNET/<br>INTRANET | 19<br>COMPUTER<br>ADD-ONS | 20                       | 21  | 22  |
| 23  | 24                   | 25                          | 26                        | 27                       | 28  | 29  |
| 30  |                      |                             |                           |                          |     |     |





# DECEMBER 1997

| SUN | MON                  | TUE                         | WED                   | THU | FRI | SAT |
|-----|----------------------|-----------------------------|-----------------------|-----|-----|-----|
|     | 1                    | 2                           | 3                     | 4   | 5   | 6   |
| 7   | 8<br>E-MAIL<br>CLASS | 9                           | 10<br>E-MAIL<br>CLASS | 11  | 12  | 13  |
| 14  | 15                   | 16<br>INTERNET/<br>INTRANET | 17                    | 18  | 19  | 20  |
| 21  | 22                   | 23                          | 24                    | 25  | 26  | 27  |
| 28  | 29                   | 30                          | 31                    |     |     |     |

## APPENDIX C: INTRANET WEB PAGES

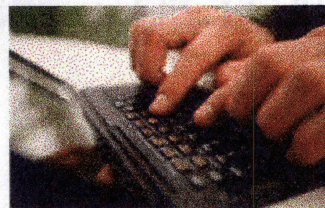
### KENNEDY COYOTES AND COMPUTERS:

A Technology Training Program for Kennedy School



# Kennedy Technology Training

## 1997 - 1998



### Coyotes and Computers

---

John F. Kennedy is excited to offer in-house technology training courses on campus. Just think you won't have to leave campus to improve your skills.



#### E-Mail

E-mail is the communication tool for DSUSD.  
Learn how to use this tool to communicate with the world.



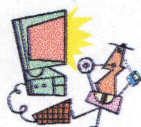
#### Authoring Software (HyperStudio)

Learn how to develop multimedia that improves instruction and allows for the creation of interactive presentations.



#### Web Page Design

Learn how to create homepages for the classroom, publish student work and share information



#### Computer Add-Ons

Learn how to install and use the Scanner,



#### Internet / Intranet

Learn how to use the Internet and District Intranet

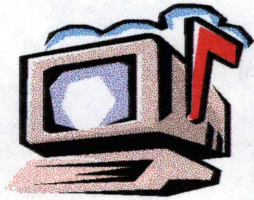


#### Event Calendar

Learn the Class Schedule for Kennedy technology, learn about new classes and the times technology support groups meet



# E-mail



E-mail is rapidly becoming the communication tool at the school site. Desert Sands Unified School District has made a commitment to e-mail by providing every teacher with access to the District Intranet system.

## Course Objective:

Teachers will demonstrate a working knowledge of e-mail in the class. Teachers will be able to perform the following course goals.

## Goals:

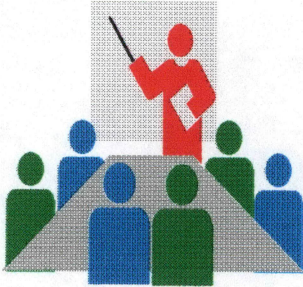
- Send an e-mail.
- Reply to an e-mail.
- Forward a message.
- Delete a message.
- Print a message.
- Save a message.
- Attach a file.
- Use the address book.
- Create an address list for groups.

## Time:

The class will meet for 2 hours once a week for 2 weeks. The group will set additional meeting times to support each other in using e-mail.



# HyperStudio



Authoring software, specifically HyperStudio, is becoming a tool for teachers and students. HyperStudio allows for the creation of stacks of cards that control buttons, graphics and text. The cards can be used for all types of instructional purposes. HyperStudio can be used by teachers to develop materials that improve instruction and students can explore the world of multimedia by using this program as a tool to develop their own presentations.

**Course Objective:** Teachers will demonstrate a working knowledge of HyperStudio by creating a presentation for use in their classroom. The presentation will include cards, buttons, tools, buttons, graphics and sound.

## **Goals:**

- Installing HyperStudio.
- Creating cards.
- Linking cards.
- Adding text.
- Adding buttons.
- Inserting graphics.
- Working with Paint Tools.
- Adding sound.

## **Time:**

The class will meet for 2 times a week for 5 weeks. Each class will meet for 2 hours. There will be an additional hour available after each session for teachers to work on their own projects.

[Home Page](#) | [E-Mail](#) | [Web Page Design](#)  
[Computer Add Ons](#) | [Internet / Intranet](#) | [Event Calendar](#)



# Web Page Design

Desert Sands Unified School District has invested heavily to bring microwave technology to the classroom. With this technology each teacher now has access to the Internet and the district Intranet. This gives the teacher the ability to design Web pages for the classroom, publish student work on-line, and share information with other teachers.



## Course Objective:

Teachers will learn to understand HTML and to create HTML documents. They will create their own Web pages and Web sites for the district Intranet.

## Goals:

Teachers will learn to use HTML language by developing a Web page for the district Intranet. The Web page will include text, graphics, links and tags.

## Time:

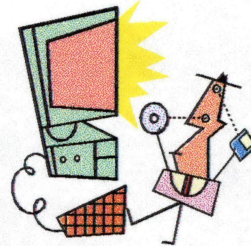
The class will meet once a week for 6 weeks. Additional time may be scheduled as needed for the completion of Web pages.

[Home Page](#) | [E-Mail](#) | [HyperStudio](#)  
[Computer Add-Ons](#) | [Internet / Intranet](#) | [Event Calendar](#)



# Computer Add-Ons

Desert Sands Unified School District has provided a digital camera, scanner and LCD panel for each of the schools in the district. This course will serve as an introduction to the hardware and how teachers can use it to enhance their curriculum. The participants in the class will form a support network for using the equipment.



## Course Objectives:

Teachers will demonstrate the ability to install and use the designated hardware in their classrooms.

## Goals:

Teachers will learn the following:

### Scanner:

- Install Scanner and software.
- Scan documents.
- Enhance pictures.
- Save documents for importing.
- Ideas for integrating into the curriculum.

### Digital Camera

- Install and use the camera.
- Create a slide table.
- Enhance pictures with software.
- Import and save pictures.
- Ideas for integrating into the curriculum.

### LCD Panel

- Install the LCD panel.
- Ideas for classroom use.
- Ideas for integrating into the curriculum.

## Time:

The class will meet for 2 hours once a week, for a total of three weeks. The group will set additional meeting times as needed.

[Home Page](#) | [E-Mail](#) | [HyperStudio](#)  
[Web Page Design](#) | [Internet / Intranet](#) | [Event Calendar](#)



# Internet / Intranet

Desert Sands Unified School District has invested heavily to bring microwave technology to the classroom. With this technology classrooms are now linked to the community, state and worldwide communications networks. The technology allows teachers and students to exchange messages worldwide, work on cooperative group projects, gain the guidance of mentors, do research on-line and bring global resources to the classroom.



## **Course Objectives:**

Teachers will increase their competence with the Internet so that they feel secure using it as a tool in the classroom.

## **Goals:**

Teachers will explore and use resources on the Internet in the classroom. They will share Web sites that can be used to enhance curriculum. Teachers will develop bookmarks for themselves and the students.

## **Time:**

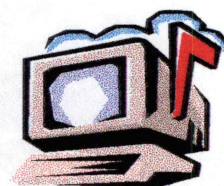
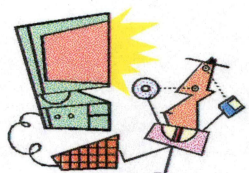
This class will meet the third Tuesday of every month. Each session will be one hour of an organized lesson followed by time to meet as grade level teams to explore the uses of the Internet at that grade level.

[Home Page](#) | [E-Mail](#) | [HyperStudio](#)  
[Web Page Design](#) | [Computer Add-Ons](#) | [Event Calendar](#)



# Event Calendar

September, 1997



## Class Schedule

**E-Mail** - Monday and Wednesday

First Session: 9/15 and 9/17

Second Session: 11/3 and 11/5

Third Session: 12/8 and 12/10

**Hyper Studio** - Monday and Wednesday - 9/29, 10/1, 10/6, 10/8, 10/13, 10/15, 10/20, 10/22, 10/27 and 10/29

**Web Page Design** - Thursday - 10/9, 10/16, 10/23, 10/30, 11/6, and 11/13

**Computer Add-Ons** - Thursday

First Session: 9/18, 9/25, and 10/2

Second Session: 11/12, 11/19 and 11/26

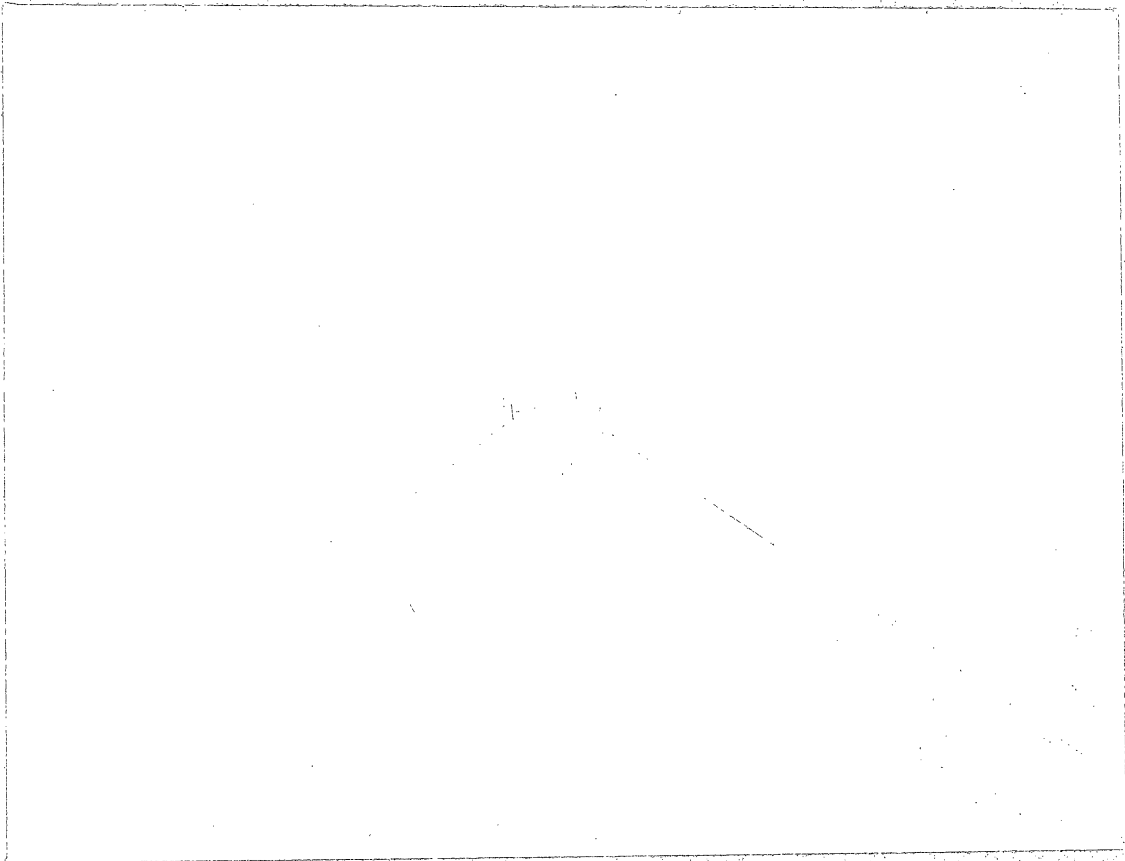
**Internet / Intranet** - Third Tuesday of every month.

This area will briefly describe technology events that may be of interest to Kennedy teachers. It will describe new classes as they are created. It will also be the place for teachers to find the times and schedules for classes. Teacher who become more proficient with technology this could also be an area where teachers share information about what they are doing.

[Home Page](#) | [E-Mail](#) | [HyperStudio](#)  
[Web Page Design](#) | [Computer Add-Ons](#) | [Internet / Intranet](#)

[Contact for any questions or comments](#)

## APPENDIX D: KENNEDY COYOTES AND COMPUTERS, DISC





## APPENDIX E: IRB FORM



CALIFORNIA STATE UNIVERSITY  
SAN BERNARDINO

May 20, 1997

Deidre Sitko  
c/o Dr. Rowena Santiago  
California State University  
5500 University Parkway  
San Bernardino, California 92407

Dear Ms. Sitko:

Your application to use human subjects in research has been reviewed by the Institutional Review Board (IRB). Your application has been approved. Please notify the IRB if any substantive changes are made in your research prospectus and/or any unanticipated risks to subjects arise.

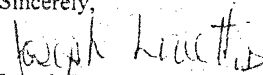
Your informed consent statement should contain a statement that reads, "This research has been reviewed and approved by the Institutional Review Board of California State University, San Bernardino."

If your project lasts longer than one year, you must reapply for approval at the end of each year. You are required to keep copies of the informed consent forms and data for at least three years.

If you have any questions regarding the IRB decision, please contact Lynn Douglass, IRB Secretary. Ms. Douglass can be reached by phone at (909) 880-5027, by fax at (909) 880-7028, or by email at [ldouglas@wiley.csusb.edu](mailto:ldouglas@wiley.csusb.edu). Please include your application identification number (above) in all correspondence.

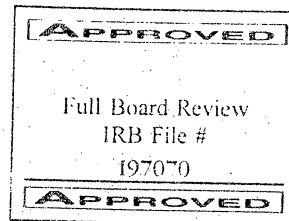
Best of luck with your research.

Sincerely,

  
Joseph Lovett, Chair  
Institutional Review Board

JL/ld

cc: Rowena Santiago, Science, Mathematics and Technology Education



*The California  
State University*

## REFERENCES

- Bagley, C. & Hunter, B. (1992). Restructuring, constructivism, and technology: Forging a new relationship. Educational Technology, 32(7), 22-26.
- Barksdale, J. M. (1996). Why schools of education are still sending you staff you'll have to train in technology. Electronic Learning, 15(5), 39-45.
- Bellingham Public Schools. (1995). Technology Plan. Bellingham, WA: Author.
- Berryman, S. (1996). Challenging school to design effective learning environments. Document No. BI-1. New York, NY: Institute on Education and the Economy.
- Bias, G. & Carey, C. (1996). Students teach the teachers: How we created teams of students and teachers to do multimedia training. Electronic Learning, 15(4), 18.
- Brooks, J. G. & Brooks, M. G. (1993). In Search of Understanding: The Case for Constructivist Classrooms. Alexandria, VA: Association for Supervision and Curriculum Development.
- Bruder, I. (1992). Technology Training: What do teachers want? Electronic Learning, 11(7), 20.
- Buchsbaum, H. (1992). Portrait of a staff development program. Electronic Learning, 11(7), 18-27.
- Cafolla, R. & Knee, R. (1995). Looking through windows 95 - A new challenge for teachers. Learning and Leading with Technology, 23(3), 49-52.
- Capper, J. (1988). Computers and learning: Do they work? A review of research. Washington DC: Center for Research into Practice.
- Collins, A. (1990). The role of computer technology in restructuring schools. In K. Sheingold & M. S. Tucker (eds.), Restructuring for learning with technology, p.29-46. N.Y.: Center for Technology in Education, Bank Street College and the National Center on Education and the Economy.
- Cross, L. (1995). Preparing students for the future with project presentations. Learning and Leading With Technology, 23(2), 24-26.

- Dempsey, D. (1993). Principally speaking: Managing change with technology. Electronic Learning, 12(8), 31.
- Educom Review Staff, (1997). Transforming and preserving education: Traditional values in question. Available: <http://educom.edu/web/pubs/reviewreview.Articles29636.html>
- Evans-Andris, M. (1995). An examination of computing styles among teachers in elementary schools. Educational Technology Research and Development, 43(2), 15-25.
- Focus On Education Staff, (1995). Transforming teaching, learning through computer technology. Available: <http://www.ed.gov/Technology/Focus/edfocus1.html>
- Gould, J. (1992). Tactics for teaching. Electronic Learning, 12(1), 34.
- Harrington-Lueker, D. (1996). Coming to grips with staff development. Electronic Learning, 16(1), 32-43.
- Hawkins, J., & MacMillan, K. (1993). Technology in the USA: An educational perspective. So what are teachers doing with this stuff? Electronic Learning, 13(2), 26.
- Hawkins, J., Sheingold, K., Gearhart, M., and Berger, C. (1982). Microcomputers in schools: Impact on the social life of elementary classrooms. Journal of Applied Developmental Psychology, 20(8), 361-371.
- Jonassen, D. H. (1990). Thinking technology: Towards a constructionist view of instructional design. Educational Technology, 30(9), 32-34.
- Jones, B. F., Valdez, G., Nowakowski, J., & Rasmussen, C. (1996). Plugging in: Choosing and using educational technology. Council for Educational Development and Research.
- Kowall, D. (1995). Training comes into its own. Managing Office Technology, 23(4), 25-29.
- McCarthy, R. (1993). A computer on every teacher's desk: Schools around the country are finding that classroom instruction and management improve when a teacher has his or her own computer. Electronic Learning Special Edition, 12(7), 10-11.
- Moersch, C. (1995). Levels of technology implementation (LoTi): A framework for measuring classroom technology

- use. Learning and Leading with Technology (November), 40-41.
- Moursund, D. (1992). Empowering teachers. The Computing Teacher, 20(4), 6.
- Nicaise, M., & Barnes, D., (1996) The union of technology, constructivism, and teacher education. Journal of Teacher Education, 47(3), 205-211.
- O'Neil, J. (1995) On technology and schools: A conversation with Chris Dede. Educational Leadership, 53(2), 6-12.
- Palazzo, A. (1996). A phoenix is reborn in L.A.: Foshay Learning Center in South Central Los Angeles makes technology and staff development the cornerstone of school renewal. Electronic Learning, 15(4), 29-31.
- Pea, R. D. (1988). Socializing the knowledge transfer problem. Report No. IRL 8900009. Palo Alto, CA: Institute for Research for Learning.
- Pearson, K. (1993). Empowering teachers for technology. The Computing Teacher, 22(1), 70-71.
- Peck, K.L., & Dorricott, D (1994). Why use technology? Educational Leadership, 40(1), 11-14.
- Ponder, Gerald, A. & Holmes, K. (1992). Purpose, products, and visions: The creation of new schools. The Educational Forum, 32(4), 405-418.
- Reigeluth, C.M., (1991). Reflections on the implications of constructivism for educational technology. Educational Technology, 31(3), 34-37.
- Reigeluth, C.M. (1992, November). The imperative for systemic change. Educational Technology 32(3), 9-13.
- Riel, M., (1990) Building a new foundation for global communities. The Writing Notebook, (January/February), 35-37.
- Robinson, S. (1992). Integrated learning systems: Staff development as the key to implementation. Educational Technology, 32(2), 40-42.
- Schurman, K. (1994). Today's schools: Three R's and one technology. PC Novice, 5(9), 28-32.

- Siegel, J. (1994). No computer know-how: U.S. schools have lots of computers, but we don't know how to use them. Electronic Learning, 13(5), 58.
- Siegel, J. (1995). The state of teacher training: The results of the first national survey of technology staff development in schools. Electronic Learning, 14(8), 43-50.
- Solomon, G. (1993). Teachers who use technology: Interviews with three very different teachers about their use of computers in class. Electronic Learning, 12(17), 16-18.
- Solomon, G., (1995) Planning for technology. Learning and Leading with Technology, 23(1), 66-67.
- Sponder, B., & Hilgenfeld, R. (1994). Cognitive Guidelines for teachers developing computer-assisted instruction. The Computing Teacher, 22(3), 9-15.
- Stinson, J. (1994). Building consensus staff development. Electronic Learning, 13(4), 25.
- Strommen, E.F., & Lincoln, B. (1992). Constructivism, technology and the future of classroom learning. Available:  
<http://www.ilt.columbia.edu/k12/livetext/docs/construct.html>.
- Tally, B. (1995). Developmental training: Understanding the ways teachers learn. Electronic Learning, 14(8), 14-15.
- Theriot, J. (1993). Selling teachers and the community on technology. Electronic Learning, 12(15), 27.
- Transforming Teaching, Learning Through Computer Technology (1995). Available:  
<http://www.ed.gov/Technology/Focus/edfocus1.html>
- Zeitz, L. E. (1995). Developing a technology workshop series for your faculty and staff. The Computing Teacher, 22(7), 62-64.
- Zeitz, L. E. (1995). Is it too late to offer introductory computing workshops to faculty and staff? The Computing Teacher, 22(6), 33-35.

1990-1991

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The concentration of the *Agrobacterium* suspension was 10<sup>6</sup> cells/ml (○), 10<sup>7</sup> cells/ml (□), 10<sup>8</sup> cells/ml (△), and 10<sup>9</sup> cells/ml (◇). The error bars represent the standard deviation of three independent experiments.